User Manual

UMPC

DB6

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Version	Description	Date	Written by
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1.1	Keypad Update	19.09.11	C. Fessler

Trademark Acknowledgments

All product and company names are trademarks or registered trademarks of their respective holders.

Conventions

This manual is divided into individual chapter with interdependent contents. If you have experience with the use of computers, you may skip individual chapters or directly look up the respective keywords.

Pictures and tables are numbered consecutively.

Keys and key combinations are written in square brackets, e.g., [Ctrl]+[Alt]+[F1] means that you must press Control, Alt and F1 keys simultaneously.

Note

Notes contain important information in connection with the directly related text or chapter.

Attention

You will find Attention notes where data loss or notebook damage may be the result of non-compliance with this note.

Warning

Warnings inform you that personal damage or damage to the notebook or individual components thereof may be the consequence or carelessness or non-compliance with the respective warning.

EMC and Safety Notice

Federal Communications Commission Statement

This standard equipment has been tested and found to comply with the limits for a class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.
This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference
- This device must accept any interference received, including interference that may cause undesired operation.

FCC Caution

To assure continued compliance, any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. (Example – use only shielded interface cables when connecting to computer or peripheral devices).

Regulatory Information / Disclaimers

Installation and use of this UMPC DB6 must be in strict accordance with the instructions included in the user documentation provided with the product. Any changes or modifications (including the antennas) made to this device that are not expressly approved by the manufacturer may void the user's authority to operate the equipment. The manufacturer is not responsible for any radio or television interference caused by unauthorized modification of this device, or the substitution of the connecting cables and equipment other than manufacturer specified. It is the responsibility of the user to correct any interference caused by such unauthorized modification, substitution or attachment. Manufacturer and its authorized resellers or distributors will assume no liability for any damage or violation of government regulations arising from failing to comply with these guidelines.

IMPORTANT NOTE (CO-LOCATION)

FCC RF Radiation Exposure Statement: This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This device and its antenna must not be co-located or operating in conjunction with any other antenna or transmitter.

Note: Descriptions made in this manual are done for standard UMPC DB6. Depending on costumers configuration your device may vary.

CE

Products with the CE Marking comply with both the EMC Directive (2004/108/EC) and the Low Voltage Directive (2006/95/EC) issued by the Commission of the European Community.

Compliance with these directives implies conformity to the following European Norms:

EN 55022 (CISPR 22) Radio Frequency Interference

EN 55024 (EN61000-4-2, EN61000-4-3, EN61000-4-4, EN61000-4-5, EN61000-4-6,EN61000-4-8,EN61000-4-11,EN61000-3-2, EN61000-3-3) Generic Immunity Standard

LVD EN 60950 (IEC950) Product Safety, IEC 60950-1:2005

802.11a/b/g/n Restrictions:

European standards dictate maximum radiated transmit power of 100mW EIRP and frequency range 2.400-2.4835GHz. In France, the equipment must be restricted to the 2.4465-2.4835GHz frequency range and must be restricted to indoor use.

CE Declaration of Conformity

Is herewith confirmed to comply with the requirements set out in the Council Directive on the Approximation of the Laws of the Member States relating to Electromagnetic Compatibility (2004/108/EC), Low-voltage Directive (2006/95/EC) and the procedures given in European Council Directive 99/5/EC.

The equipment was passed. The equipment test was performed according to the following European standards.

EN 300 328 V.1.7.1:2006

EN 301 893 V.1.4.1 (2007-07)

EN 301 V1.8.1 2008-04 / EN 301 489-17 V1.3.2 2008-04

EN 50371:2002

EN 60950-1:2005

UL, TÜV

AC Adapter (TÜV includes EN60950 LVD)

Power Conservation

This computer consumes less power than conventional computers; however, power consumption can be further reduced by properly configuring the Power Management Setups.

It is recommended that the power saving functions be enabled even not running on battery power.

Please read the power saving features and the setting procedures described in this manual for setting your computer.

Recycling

All materials used in the construction of this unit are recyclable or environmentally friendly. Please recycle the packing materials, and at the end of the computer's life, all other materials in accordance with the local regulations.

Please refer “Material and Recycling” for the contents of the materials.

Note:

- *The equipment may still contain tiny amount of hazardous substances for health and environment, though those are below control level.*
- *To avoid spreading such substances into the eco system, and to minimize the pressure on the environment, you are encouraged to use the appropriate take-back for reusing or recycling most of the materials in a safe way after the service life.*
- *The crossed bin symbol indicates proper disposal is required.*
- *For more information on collection, reuse and recycling, please consult the local or regional waste administration for more information.*

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CHAPTER 1

Getting Started

1.1 Introduction

The Ultra Mobile PC DB6 allows operation under extreme environmental conditions. All interfaces and slots are covered. The casing is equipped with rubber bumpers and provides a maximum of protection against shock, vibration, dust and humidity. The technical details are listed in chapter 3 Specifications.

The following lists the standard scope of delivery for the UMPC.

Please use this list to check the package contents for completeness. Contact dealer if one or more of the following listed items are not contained in the package.

- UMPC DB6
- AC Adapter
- AC Power cord (not pictured)
- Utility CD
- Battery (may be installed)
- Stylus Pen (2x)
- Quick Guide

Figure 1: UMPC DB6 scope of delivery

1.2 View

1.2.1 Front View

Figure 2: Front view and keypad

1. **Embedded Antennas:**
   Embedded antennas
   for wireless application
2. **LCD:**
   Displaying the visual output
   of DB6
3. **LED Indicators:**
   Indicating status by different
   colours and lighting methods
4. **Keypad:**
   For quick operation

Figure 3: Front overview

1.2.2 Rear View

1. **Finger Print Scanner** (optional)
2. **2M AF Camera** (optional)
3. **Speaker**
4. **Stylus Pen**
5. **Battery Lock**
6. **Battery**

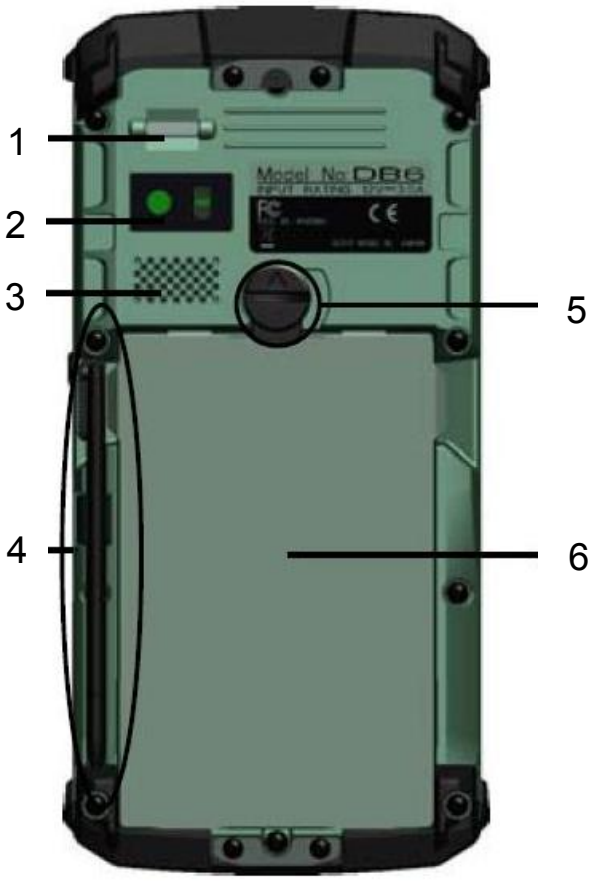


Figure 4: Rear side overview

1.2.3 Left-Side View (Side C)

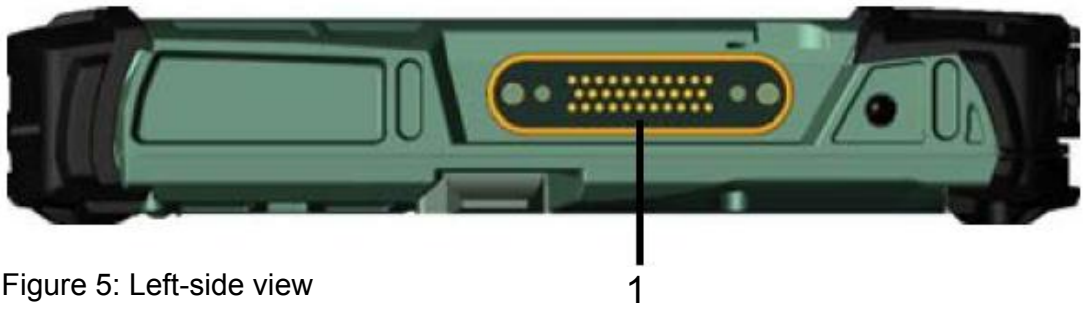


Figure 5: Left-side view

1. **Cradle POGO Connector**

1.2.4 Right-Side View (Side D)

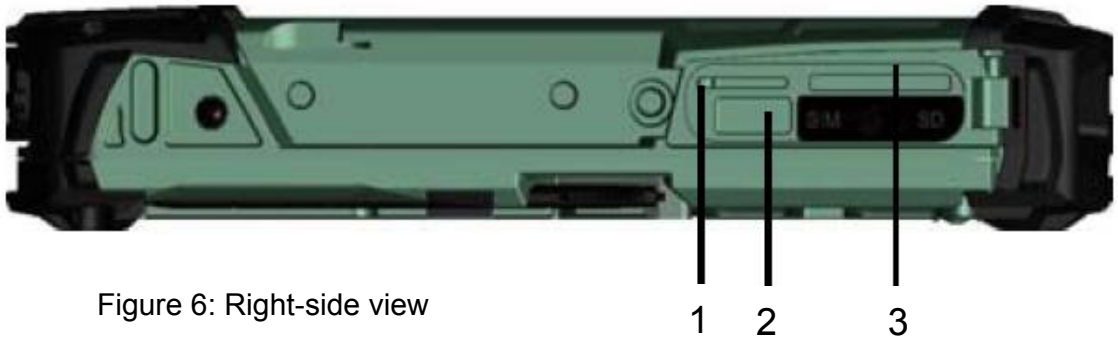


Figure 6: Right-side view

1. **SIM Card Slot**
2. **USB 2.0 Port (Host)**
3. **SD Card Slot**

1.2.5 Top View (Side A)

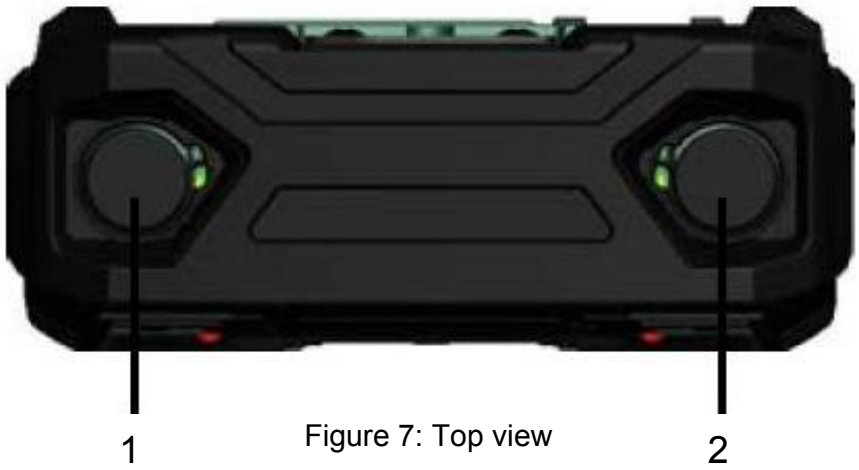


Figure 7: Top view

1. **Option 1**
2. **Option 2**

Options (Select 2 out of 7):

a) Sealed USB
b) Bluetooth SMA Antenna
c) Sealed Audio
d) GPS SMA Antenna
e) WI-FI SMA Antenna
f) HSDPA Antenna
g) Sealed Gigabit LAN (Trade Off: WLAN)

1.2.6 Bottom View (Side B)

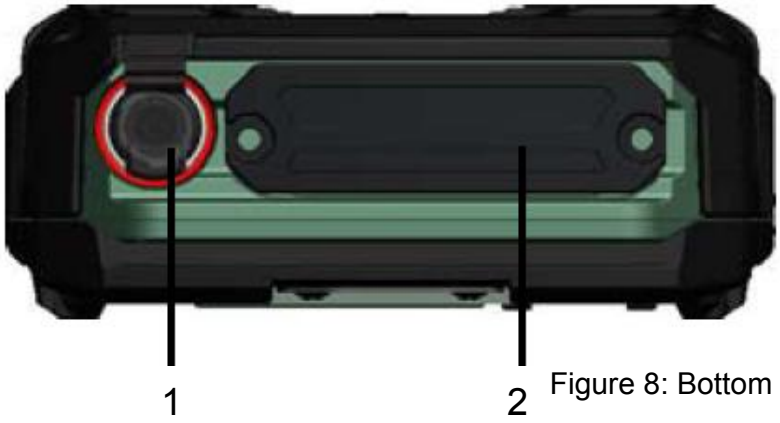


Figure 8: Bottom view

1. **DC power jack**
2. **Option 3**

Options:

Expansion POGO Connector
Signals consisted:
a) USB 2.0 1x b) COM1 (RS232)
c) Gigabit LAN d) DC In
e) RGB (Trade Off: Cradle RGB)

1.3 Preparing the UMPC DB6

- Insert the battery module into the battery module slot and tighten the safety screw.

Note: Please use a coin to turn the screw. Using screwdrivers might damage the screw or case.

Figure 9: Mounting the battery

- Connect the line cable with the power supply unit and plug the plug into the electrical outlet.

Figure 10: Connecting AC/DC Adapter

Note: The enclosed line cable complies with the specifications of the country in which the UMPC was purchased. Please ensure that the line cable has been approved for the country in which the notebook will be used. Find further information on country-specific power plug version in the Annex.

- Plug the DC plug of the power supply unit into the DC input of the DB6 and lock the connector well clockwise.
- Charge the DB6 for at least 10 minutes.

Note: There is no memory effect with the used Lithium-Ion batteries. It is not necessary to discharge the battery completely.

- Turn the UMPC DB6 on by pressing the power button. ⏻.

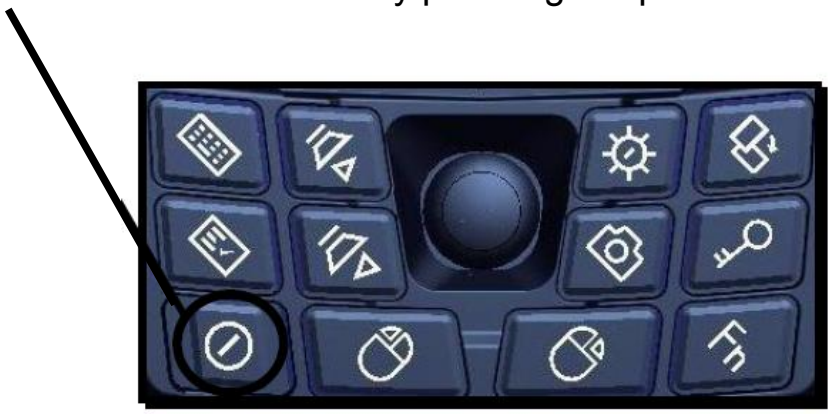


Figure 11: Power Button

Note: The power is able to be ON without any battery mounted once all power cords are connected.

- Turn OFF the computer using either one of the following procedures:
    - Press power button for 4 seconds to have a “Hard” power off.

System shuts down without saving any data or parameters

- Press power button momentarily to “Standby” or “Hibernate” dependent on operating system (OS) and power scheme settings.

Note: Some operating systems may not support these functions.

- If you are using Microsoft Windows operating system click Start → Shutdown or press the Windows button to turn the computer off.

Driver or application software installation may be necessary for further operation.

1.4 Power-On Self Test (POST)

American Megatrends
AMIBIOS(C)2006 American Megatrends, Inc.
BIOS Date: 12/06/10 17:56:17 Ver: 08.00.15
CPU : Intel(R) Atom(TM) CPU 2530 @ 1.60GHz
Speed : 1.60 GHz
Press DEL to run Setup
Press F11 for BBS POPUP
Press F12 if you want to boot from the network
Initializing USB Controllers .. Done.
2039MB OK
(C) American Megatrends, Inc.
603C

Figure 12: POST screen

Note: It is recommended to use an external USB keyboard to set up BIOS. See chapter 4 BIOS Setup.

After start press [DEL] to start the BIOS setup of the UMPC DB6. Check chapter BIOS Setup for further information.

The system will now run a Power-On Self Test (POST). During this test the main UMPC components are checked:

- processor
- memory
- interrupt controller
- inputs and outputs
- DMA controller, clock unit and video controller

As part of this self test, the current hardware configuration is compared with the system's configuration data stored in the battery-based CMOS-RAM. In addition, all hardware components are routinely checked. If during the Power-On Self Test a deviation from the current configuration and/or a hardware error is detected, the

UMPC will automatically display a message requesting to start the Setup service program (see chapter 4 BIOS Setup).

1.5 Installing the Windows Operating System

When you switch on the UMPC DB6 for the first time, the Microsoft Windows 7 start screen will appear.
Follow the instructions on the screen.
When switching on the computer for the first time, the enclosed software will be installed and configured. Since this process may not be interrupted, you should allow some time for it and should leave the UMPC connected to the line voltage via the AC adapter. During installation, you may only reboot the UMPC DB6 when requested to do so.

Note: Only applies, if an installed Windows 7 was part of delivery.

1.6 Adjusting screen brightness

You can adjust LCD brightness to your needs with the following keys:

- Increase brightness: Fn + Volume up
- Reduce brightness: Fn + Volume down

CHAPTER 2

Components and Operations

2 Components and Operation

2.1 Location

A clean and moisture-free environment is preferred. Make room for air circulation.
Avoid areas with:

- Sudden or extreme changes in temperature.
- Extreme heat.
- Strong electromagnetic fields (near television set, motor rotation area, etc.).
- Dust or high humidity.

If it is necessary to work in a hostile environment, please regularly maintain your computer by cleaning dust, water, etc. to keep it in optimal condition.

2.2 Ruggedness

The computer is designed with rugged features as vibration, shock, dust, and rain/water protection. However, it is still necessary to provide appropriate protection while operating in harsh environments. NEVER immerse the computer completely in water. Doing so may cause permanent damages. Drop may cause parts break or permanent damages.
The I/O ports and devices must have caps tightly closed or cable inlets sealed while exposed to water or dust.
All connectors will corrode if exposed to water or moisture. Corrosion is accelerated if the power is ON. Please take proper measures in cable connection to avoid water entering into connectors. The DC jack and cables are sealed and may be operated with water splashing while attached. All port covers should be in place when no cable is attached.

2.3 Operating Systems

The computer is compatible with most operating systems (OS). However, not all functions are 100% compatible.
For example, ACPI, APM, Smart Battery, etc. are not available on DOS, Windows NT, and other non-Microsoft OS. Consequently “Standby”, “Hibernation”, “Battery Gauge”, etc. would not work under such operating systems.

Note:
ACPI: Advanced Configurations and Power Interface
APM: Advanced Power Management

2.4 Power supply for the UMPC DB6

The DB6 may be power supplied either via the AC adapter or the integrated battery.

2.4.1 AC Adapter

Figure 13: AC adapter

The enclosed AC adapter automatically adjusts to the line voltage of the respective country. Make sure you have the correct country-specific power-plug version (see Annex B).

The AC adapter supplies the connected UMPC with power and charges the integrated Lithium-Ion battery. The green operation LED illuminates as soon as the adapter is connected with the power line, regardless whether the adapter is connected with the DB6.

For power supply to the UMPC DB6, only use original manufacturer parts provided for this PC. Otherwise you may cause damage to the notebook and/or externally connected peripherals. Moreover, the manufacturer's warranty will forfeit if you ignore these instructions

2.4.2 Battery Operation

The exchangeable Lithium-Ion battery is the DB6 main power source when the AC adapter is not connected. As a standard, the UMPC DB6 is equipped both with a primary and a real-time clock (RTC) battery.

Figure 14: Battery

RTC-Battery

The RTC (Real Time Clock) battery provides power to the integrated real-time clock and the calendar even when the notebook is switched off and not connected with the AC adapter. In addition, the RTC battery is responsible for maintaining the system settings in BIOS. The RTC battery is also charged via the connected AC adapter. In order to avoid losing system settings when the UMPC is not used for a longer period of time, you should connect the DB6 with the AC adapter for a few hours a least once a month. When commissioning the UMPC, please make sure that date and time settings are correct; otherwise, you will need to adjust them.

Note: If required, the RTC battery installed in the UMPC should only be replaced by authorised service staff, since it requires opening the UMPC.

Primary Battery

Before the battery is operated for the first time, the battery should be fully charged.

Charging the Battery

An AC adapter, an AC power cord and a battery are required during battery charging. These are standard accessories for your handheld computer. Do always use the AC adapter, the AC power cord and the battery designed for your computer.
After unpacking your UMPC, you need to start charging the battery for further use. Please connect your AC power cord and AC adapter well with the plug and mount your battery well before starting charging (see 1.3). We suggest you to charge the battery for about 8hours at the very beginning to give a full charge for your battery.
When the battery is nearly exhausted, please save and close the files you are currently working on and plug in the AC adapter to recharge the battery or swap with a charged battery.

Monitoring Battery Capacity

If the DB6 operates with the battery, you may monitor the remaining battery energy as follows in the Windows operation system:
Click on “Battery” symbol in the task bar, or in Windows system control, on the “Energy” symbol.

The following window will inform you on the charge status of the integrated battery/batteries.

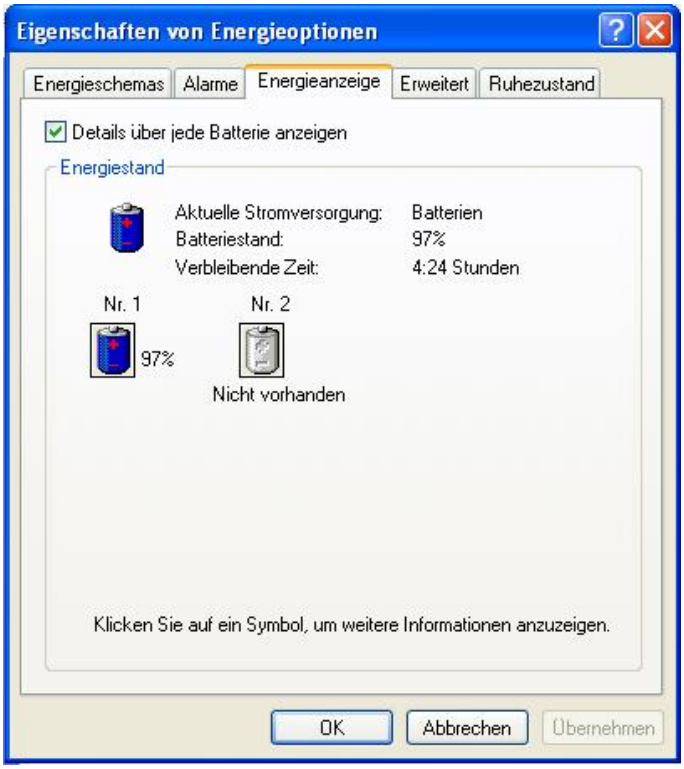


Figure 15: Energy options (German)

Battery – Warnings

When the battery is nearly exhausted, the OS will show a warning icon. Also, the Power Indicator LED will flash green when the battery level is under 15%.

Note: The following information refers to the standard settings in the Windows XP operating system. If another operating system is installed, the energy settings may not function properly. This particular applies to Windows NT and operating systems which are not Windows based.

Warning with low Battery-Charge State

If the remaining battery power drops under 10% of the overall capacity, the UMPC will inform you about this situation as follows in the standard settings:

- A one-time signal will sound
- A text will be displayed that warns you of low battery-charge state

The UMPC will remain switched on. As this time, you should immediately store your work, since battery power will last for another 5 to 10 minutes only.

Warning with critical Battery-Charge State

If the remaining battery power has reached a rest capacity of 5%, the DB6 will automatically carry out the following measures in the standard settings:

- A one-time signal will sound
- A text will be displayed that warns you of critical battery-charge state
- The UMPC will switch to idle state

If you have not done so, you must now connect the UMPC with the AC adapter or replace the low battery with a fully charged one.

If you switch on the UMPC DB6 after the automatic shutdown, note, that the battery will allow operation for a very short time. During the last minutes of battery power, the battery-charge state indicator will indicate this critical state.

Note: Battery performance and lifecycle depend on a number of factors, such as ambient temperature, age, number of charge and discharge cycles, etc.

Replacing Battery

When the battery is nearly exhausted, there are two ways to keep your handheld computer working. Connect the AC adapter and the power cord designed for this handheld computer to start charging is one method; directly replace a charged batter designed for this handheld computer may be the other one.

Note: Always remember to turn OFF the power before replacing the battery. You can change the battery in 30 seconds under standby mode; otherwise it may cause data loss or malfunction of your handheld computer.

Power Saving Tips

- Turn OFF the LCD backlight when not using the UMPC
- Lower the intensity of the LCD backlight
- Use well with Shutdown, Standby and Hibernation
- Use well with the power management settings in your OS

Supporting ACPI

Your UMPC supports ACPI for power management. With ACPI and an ACPI-compliant operating system such as Windows, this feature will allow you to reduce the power consumption for energy saving. LED indicators will show the actual ACPI state:
Standby: Power LED indicator is ON, other LED indicators are OFF
Hibernate: All LED indicators are OFF
Shutdown: All LED indicators are OFF

AC Adapter and AC Power Cord Safety

There are specific power requirements for your UMPC:

- Only use an approved AC adapter designed for this computer.
- Use a grounded power outlet.
- When unplugging the AC power cord, please be sure to disconnect it from the plug head but from its wire.
- Make sure the socket and any other extension cords you use can support the total current load of all the connected devices.
- Before cleaning the computer, make sure it is disconnected from any external power supply.

Battery Precautions

- Only use the batteries designed for this computer. The wrong battery may cause explosion, leakage or damage to the computer.
- Do not remove the battery from the UMPC while it is powered on.
- Do not continuously use a battery which has been dropped or which appears damaged (e.g. bent or twisted) in any way. Even if the computer is able to work with a damaged battery, circuit damage may occur and possibly cause fire.
- Always use the charger designed for this UMPC to recharge the battery. Incorrect recharging may damage the battery.
- Do not try to repair a battery by yourself. Refer to any battery repair or replacement, please contact with your service representative.
- Please dispose of a damaged battery promptly and carefully. Explosion or leakage may occur if the battery is exposed to fire, improperly handled or discarded.

Warning

Before any upgrade procedures, make sure the power is turned OFF and all cables are disconnected (including telephone lines). Also, it is advisable to remove your battery to prevent turning the computer on accidentally.

Battery Disposal and Caution

The product you have purchased contains a rechargeable battery. The battery is recyclable. At the end of its service life, under various state and local laws, it may be illegal to dispose of this battery into the municipal waste stream. Check with your local solid waste officials for details in your area for recycling options or proper disposal. Danger of explosion may possibly occur if the battery is replaced incorrectly. Replace only with the same or equivalent battery recommended by the manufacturer. Discard the used battery according to the manufacturer's instructions.

Using the Energy-Saving Mode

If you operate the DB6 with a battery, you may choose to use different energy-saving functions in order to extend operation time.

Among other things, the duration of the battery depends on the following factors:

- Processor type and CPU clock frequency
- Screen brightness
- LCD switch-off
- Frequency and duration of access to the hard disk and optical drives
- Initial battery-charge status
- Usage intensity of connected and inserted additional devices, such as USB devices or Express cards that are powered via the battery

Setting the Energy-Saving Functions

Windows 7

Under Start → System control → Performance and maintenance → Energy options, you can set the DB6's energy-saving functions.

Standby Mode

If you wish to briefly interrupt your work, you may switch off the UMPC without closing the application. In standby mode, the LCD is switched off, the hard disk drive shuts down and the processor is clocked to a very low frequency. The DB6's RAM continues to be supplied with energy so that all the information remains in the RAM. When you turn the notebook back on, you can continue your work where you left off.

Hibernate

When hibernate is activated, all data in the DB6's RAM and the information on the screen are stored on the hard disk drive.

Thereafter, the UMPC shuts down. Depending on the open programs, this process may take a few seconds.

Note: Activating standby mode will save energy, when you switch the notebook on and off frequently. If you do not use the UMPC for a long period of time, end the energy-saving mode and switch off the notebook.

2.5 Shutdown

The following procedure is recommended in shutting down the computer:

- Save any work you want to keep

- Make sure none of the disk drives are active (HDD, FDD, CD-ROM, DVD)
- Remove any diskettes, CD-ROMs, or other media
- Follow the shut down procedure of you operating system

Failure to shut down the computer properly may result in loss of data or hardware damages.
Automatic shut down is activated at battery exhaust. Be sure to finish your work and save all your data when the battery low warning appears.

2.6 Using Indicators and Keypad

Your UMPC is designed with a keypad for easy and quick operation. LED indicators are showing the state of your UMPC.

2.6.1 Indicators

Figure 16: LED indicators

Power Indicator

- Green: Power
- Flashing red: Standby (S3)
- Consistent Green + Flashing Red: Battery power is lower than 15% during Standby

Charger Indicator

- Orange: Charging battery

SSD Indicator

- Green: SSD access (read/write)
- Red: Input lock

Wireless Device Indicator

- Blue: Wireless Device active

2.6.2 Keypad Hotkeys

Figure 17: Keypad

Note: Please install the Device Power Manager application to activate the hotkeys.

1st Layer:

1. Windowskey + U
2. Application Menu
3. Power ON/OFF
4. Volume up
5. Volume down
6. Mouse left button
7. Invisible mode ON/OFF
8. Camera
9. Mouse right button
10. Screen rotation
11. Login
12. Function key

2nd Layer:

a. Fn + Invisible mode ON/OFF = Keypad backlight ON/OFF
b. Fn + Volume up/down = LCD brightness up/down
c. Fn + Key 1 = Input lock
d. Fn + Application Menu = Enter

2.7 Application Menu

Often used functions can be accessed with the help of the Application Menu hotkey. The Device Power Manager includes the driver of the keypad hotkeys. Install this application before activating the keypad hotkeys.

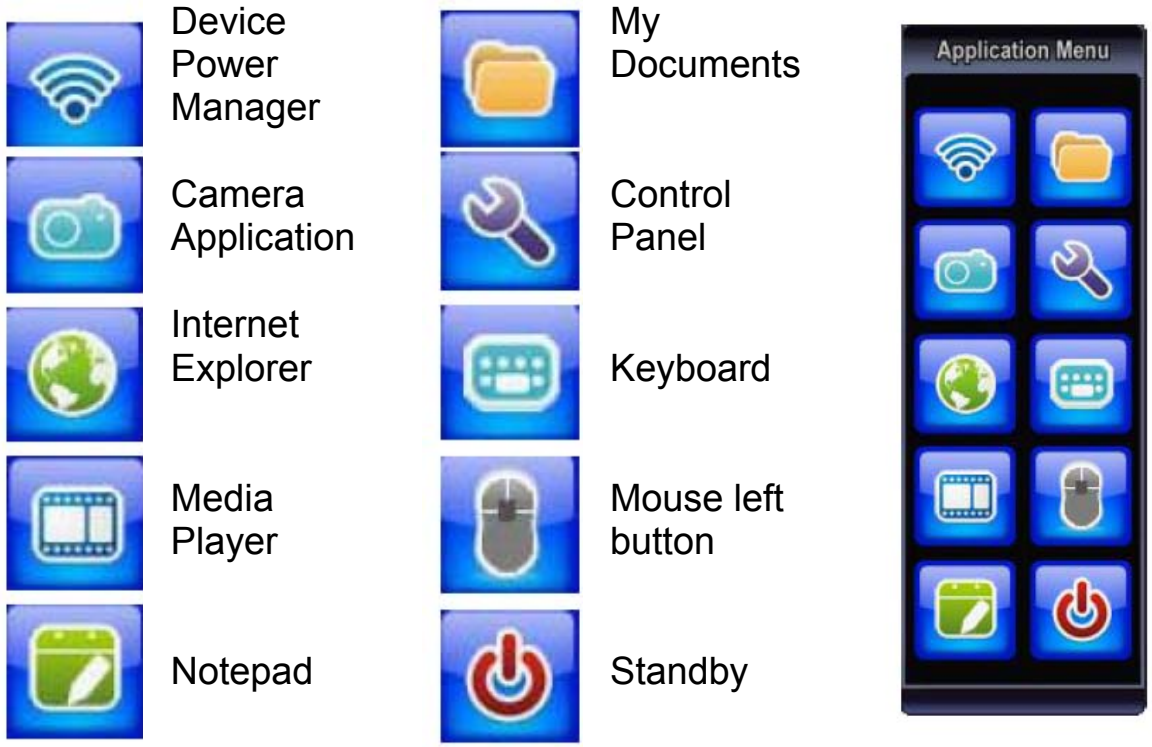


Figure 18: Application Menu functions

2.8 Touch Screen

The DB6 is equipped with a high sensitive touch panel allowing you to navigate on the touch screen easily without using any other devices such as external keyboard or mouse. Before using touch screen, please follow the illustrations below to calibrate the touch screen.

1. Open PenMount Control Panel

2. Click “Configure” to start

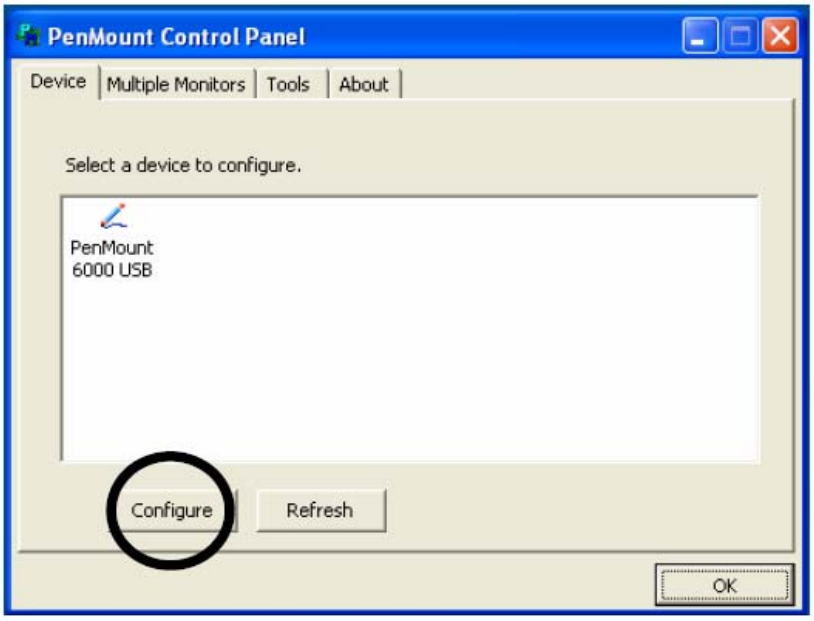


Figure 19: Configure

3. Click “Standard Calibration” and follow the instructions

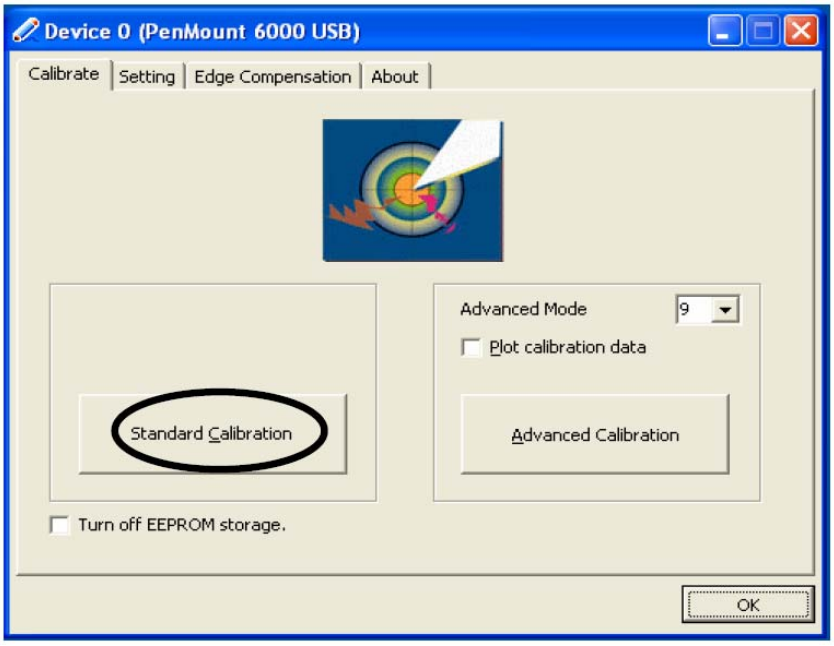


Figure 20: Standard Calibration

The DB6 is equipped with a stylus pen to use the touch screen.

Touch screen usage:

Single Click:	Tap the touch screen with the stylus pen gently.
Double Click:	Tap the touch screen quickly twice with the stylus pen.
Drag and Drop:	Tap and hold the object with the stylus pen and move to the destination you want (drag). Leave the stylus pen from the touch screen once you finished dragging (drop).
Right Click:	Tap and hold for 2~3 seconds.

Note: Under direct sunlight for a longer time, the touch screen could heat up over 70°C.

2.9 Microphone

The DB6 can record your sound and/or voice input. Please follow the instruction below to start.

1. Open Realtek HD Audio Manager and set the microphone as recording tool.

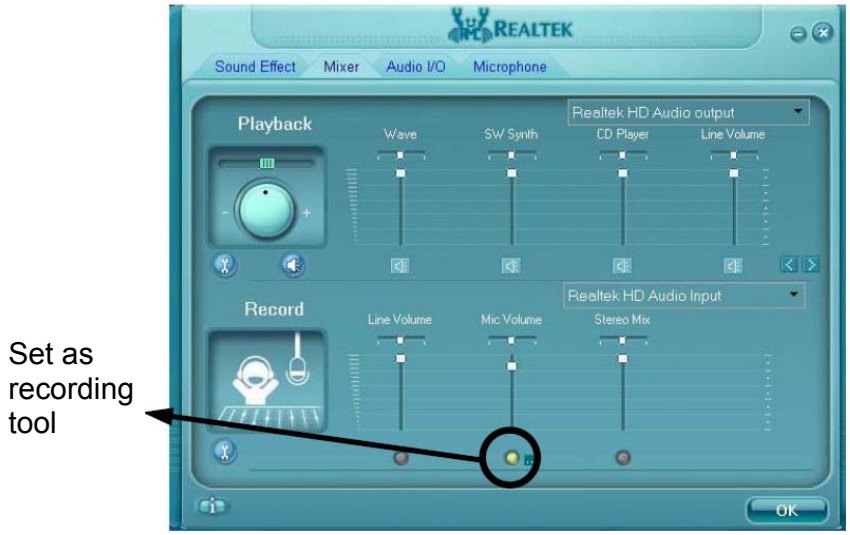


Figure 21: Set microphone

2. To increase the quality please make sure the sound sources are close to the microphone

Figure 22: Microphone location

3. Start recording with your recorder i.e. Sound Recorder of Windows 7.

2.10 Fingerprint Sensor (optional)

The DB6 provides a fingerprint sensor to improve authentication and security. To set up the fingerprint sensor follow the steps shown below. Use Device Power Manager to activate/deactivate the fingerprint sensor (check 2.11).

1. Install digitalPersona application and drivers (utility CD).
2. Open digitalPersona
3. Click “Next” to initialize setting

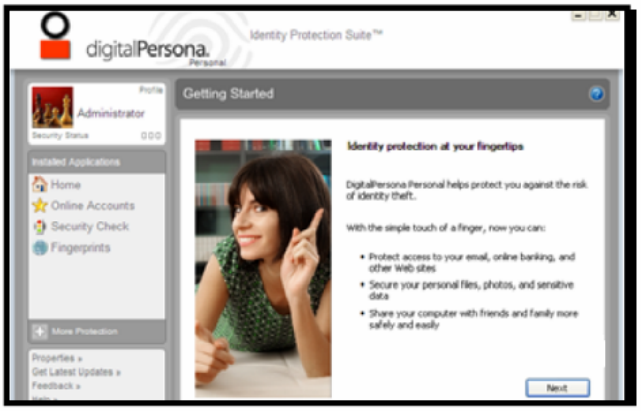


Figure 23: digitalPersona

4. Follow the instructions. You can practice first or set up directly.

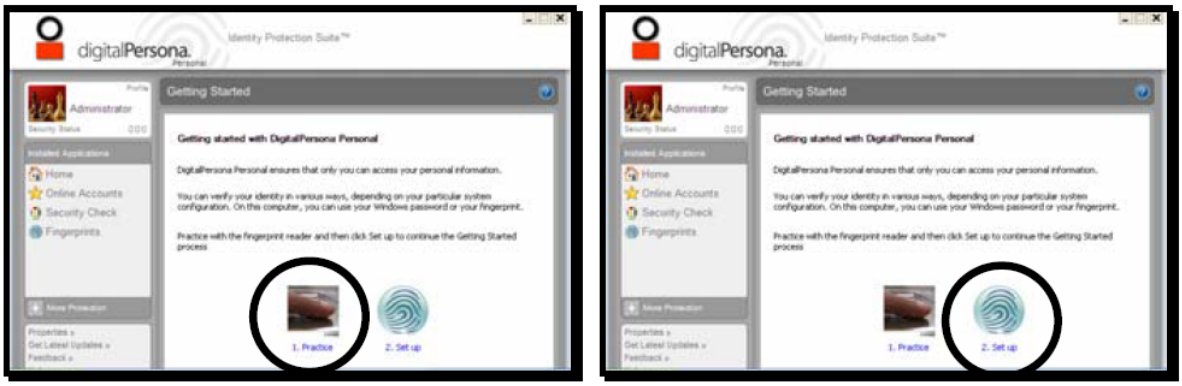


Figure 24: Fingerprint setup

2.11 Wireless Devices

Note: You can turn wireless devices ON/OFF with the help of the Device Power Manager application.

You must install the “Device Power Manager” in order to use the wireless devices. To install the “Device Power Manager” application run “Utilities\Device Power Manager\DB6 Utility 20101122(1.0.0.6)\setup.exe” (name may change with new versions) and follow the instructions to install.

2.11.1 Bluetooth

Bluetooth is a standard wireless device along with your UMPC. A Class 2 Bluetooth® v2.1 + EDR system is backward compatible with v1.1/1.2/2.0 devices. It supports a short range wireless communication to connect with other Bluetooth devices.

To activate the Bluetooth function, please follow the illustrations below:

1. Install the Bluetooth driver (see chapter 5.1.8)
2. Launch the Device Power Manager
3. Click Bluetooth to activate Bluetooth function

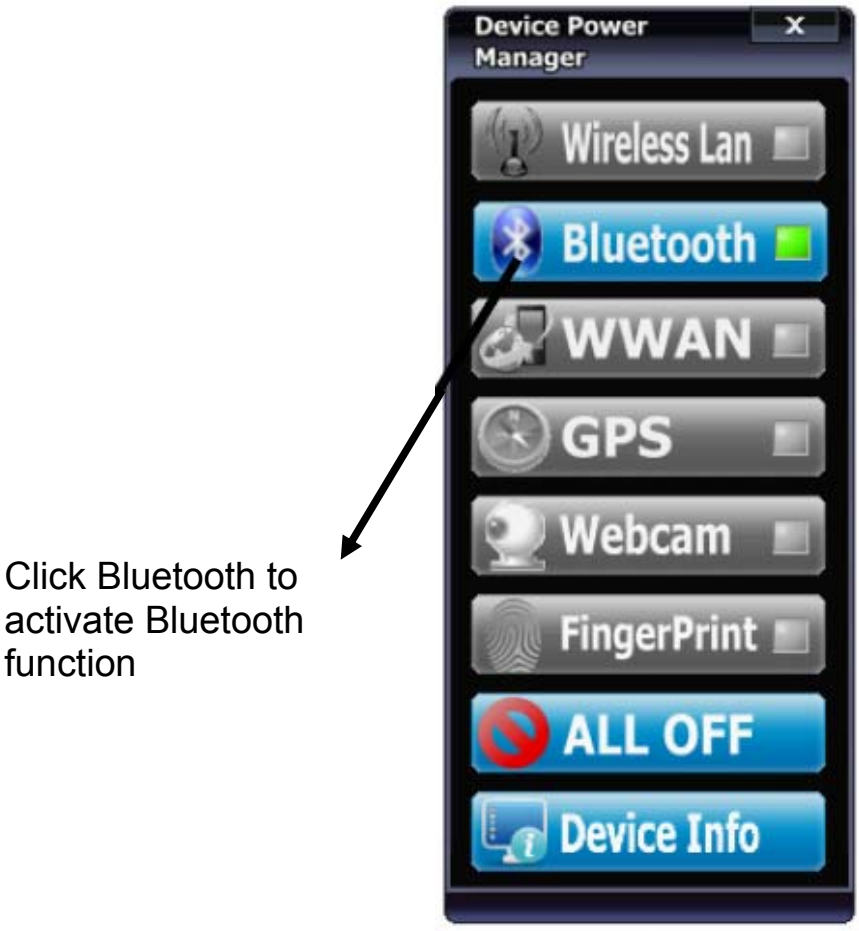


Figure 25: Device Power Manager Bluetooth

4. Once the Bluetooth function starts up, the Wireless LED indicator will turn on in blue and the Bluetooth icon will show up in the OS accordingly.

2.11.2 Wireless LAN (optional)

Wireless LAN card is an optional device for your UMPC. The wireless LAN card and embedded antenna support IEEE 802.11 a/b/g/n.

To activate your Wireless LAN function, please follow the illustrations shown below.

1. Install WLAN driver (see chapter 5.1.9)
2. Launch the Device Power Manager
3. Click Wireless LAN to activate WLAN function

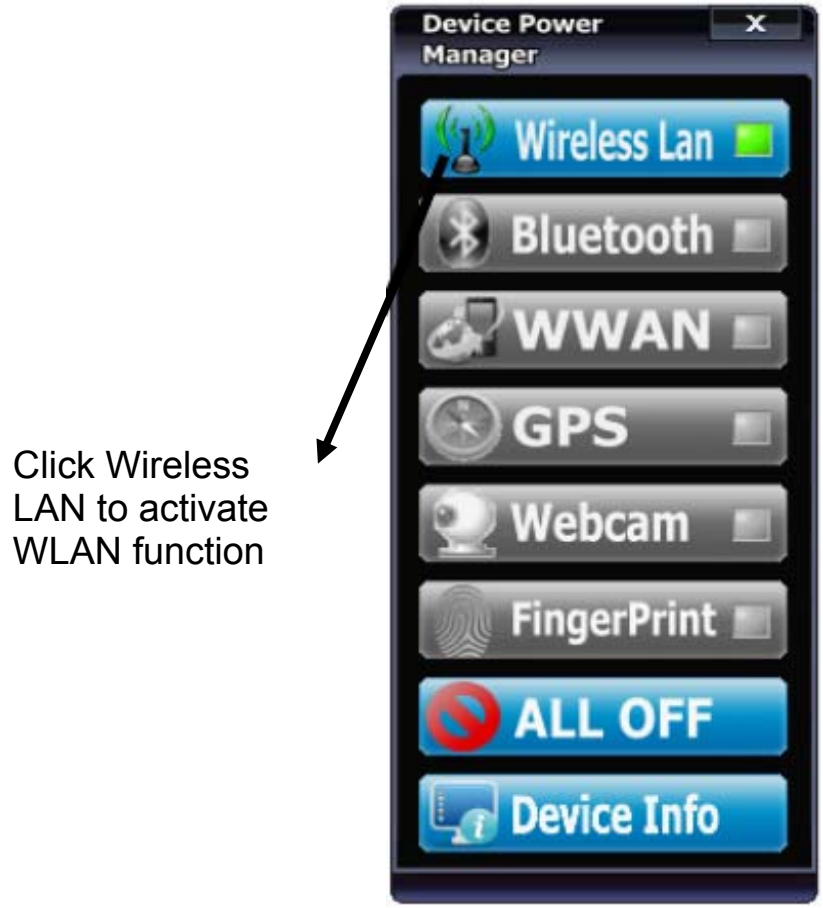


Figure 26: Device Power Manager WLAN

4. Once the WLAN function starts up, the Wireless LED indicator will turn on in blue and the WLAN icon will show up in the OS accordingly.

2.11.3 WWAN (optional)

WWAN is an optional module for the DB6. With the optional 3.5G WWAN module with embedded antenna, the UMPC will be able use a 3.5G SIM card for WWAN telecommunication.

1. Insert the SIM card

    a) Turn DB6 OFF

    b) Open the lock cover

c) Pull up the lock cover

d) Put the SIM card into the SIM card slot

e) Lock the cover

2. Install WWAN driver (see chapter 5.1.10)
3. Launch the Device Power Manager
4. Click WWAN to activate WWAN function

Figure 27: Device Power Manager WWAN

5. Once the WWAN function starts up, the Wireless LED indicator will turn on in blue.

2.11.4 GPS (optional)

GPS is an optional module for the DB6. This GPS module supports GPS and Galileo systems.

1. Install GPS drivers (see chapter 5.1.11) and application
2. Launch the Device Power Manager
3. Click GPS to activate GPS function

Figure 28: Device Power Manager GPS

2.11.5 Camera (optional)

The DB6 provides an optional 2 million-pixel CMOS camera to capture images at any time. Also, it supports video recording function. Press the camera button or the application menu button to enter the camera application main window.

Figure 29: Camera main window

Taking pictures

Click in the camera window or press the camera button again to take pictures.
Pictures will automatically be saved in C:\Documents and Settings\User Name\My Documents\My Pictures.

Recording videos

Click in the camera window to record videos. To stop recording click . Adjusting volume during recording is possible.
Videos will be saved in C:\Documents and Settings\User Name\My Video.

Other functions

Video Format Properties: Advanced video format settings

Image Properties: Advanced image settings and camera control

Volume Level: Adjust video recording volume

Flash LED Settings: Advanced flash LED settings

Exit: Exit the camera window/function

Note: Rotating the screen vertically while using the camera is recommended.

CHAPTER 3

Specifications

3 Specifications

3.1 Components

3.1.1 System Unit

Component	UMPC DB6
CPU	**Intel® Atom™ Processor Z530 1.6GHz**
Level 2 Cache	**512KB**
Video Memory	**Max. 509MB (shared Memory)**
Chipset	**Intel® SCH US15W**
RAM	**2GB DDR2 533MHz**
VGA	**5“ WVGA (800x480 Pixel) sunlight-readable, LED backlight**
Graphic Controller	**Intel® GMA 500, supporting Microsoft® DirectX9 and Open GL 1.1**
Touch Screen	**Rugged Touch Screen**
HDD	**1.8” PATA SSD**
Sound	**HD Audio Codec and Amplifier with Mono Speaker**
Communication	**Bluetooth® V2.1 + EDR (Class 2)**
Interfaces (side D)	**USB 2.0 1x SD Card Slot 1x SIM Card Slot 1x**
Interfaces (side C)	**Cradle POGO Connector**
Interfaces (side B)	**DC Power Jack, Option**
Interfaces (side A)	**Option 2x**
Primary battery	**7.4V/3900mAH Lithium-Ion Battery**
Power input	**DC 12V ~ 32V**
Dimensions	**200 (L) mm x 94 (W) mm x 36 (H) mm**
Weight	**690 g (depends on configuration)**
Case	**Magnesium Alloy**
Colour	**black/NATO green**
Certification	**CE, FCC, WEEE, REACH, MIL-STD-810G, IP55 (DB6-I)/IP65 (DB6-M), MIL-STD-461F (DB6-M standard, DB6-I option)**

Table 1: UMPC components

3.1.2 AC Adapter

Features	**Input: AC 100V ~ 240V 50/60Hz** **Output: DC 12V ± 1V, max. 36W** **Also complies with military power source100V ~ 240V 400Hz** **Dimensions: 116.8 (L) mm x 77.8 (W) mm x 12.5 (H) mm** **Weight: 185g**

Table 2: AC adapter

3.1.3 Optional Devices and Accessories

Component	UMPC DB6
Camera	**2 Million-pixels CMOS camera with flashlight**
	Supporting video recording
Communication	**Wireless LAN card: supporting IEEE 802.11 a/b/g/n**
	WWAN:HSDPA
	GPS: Ublox LEA-5H
	Sealed Gigabit LAN (trade off with WLAN)
I/O Ports	**Sealed USB (see chapter 1.2)**
	Sealed Audio (see chapter 1.2)
	Expansion Connector (see chapter 1.2)
Security	**Fingerprint Reader**
Carry Bag	
Vehicle Power Cord	

Table 3: Possible options

3.1.4 Primary Battery

Primary battery	**Type: Lithium-Ion cells** **Capacity: 7.4V 3900mAh** **Dimensions: 116.8mm x 77.8mm x 12.5mm** **Weight: 185g**

Table 4: Battery

3.1.5 Material and Recycling

Component	Material
Plastic Case	**Recyclable UL grade PC + ABS GE C2800 or C6200**
Magnesium Case	**Magnesium alloy AZ91D**
Keypad	**Silicon Rubber**
PCB	**FR-4, UL 94 V0**
Battery	**Rechargeable Lithium-Ion cells**
Packing	**Carton: Unbleached paper** **Cushion: Recyclable EPE** **Carrying bag: Recyclable PE Fibre** **Manual: Paper**
Please recycle the parts according to local regulations.	

Table 5: Material and recycling

3.2 Interfaces

Note: May not apply for customized DB6 models.

3.2.1 Cradle POGO connector

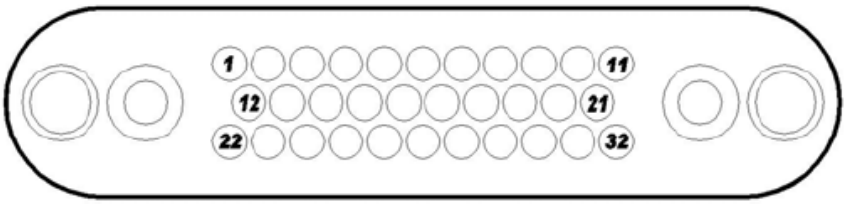


Figure 30: Cradle POGO connector

Pin	Assignment
1	**GND1**
2	**VA-adapter**
3	**VA-adapter**
4	**+V5S**
5	**NC**
6	**NC**
7	**SCH_GPIOSUS_3**
8	**RST#**
9	**USB_PN5**
10	**USBClient_PN2**
11	**GND2**
12	**NC**
13	**VA-adapter**
14	**VA-adapter**
15	**CRT-GREEN**
16	**NC**
17	**Detect_Sense**
18	**CRT_DDC_DATA**
19	**RTCRST#**
20	**USB_PP5**
21	**USBCLient_PP2**
22	**GND3**
23	**NC**
24	**CRT_RED**

Pin	Assignment
25	**CRT_BLUE**
26	**CRT_DDC_CLK**
27	**CRT_HSYNC**
28	**CRT_VSYNC**
29	**PM_S3_ON#**
30	**NC**
31	**Detect_OK**
32	**GND4**

Table 6: Pin assignment cradle POGO connector

3.2.2 Expansion POGO connector

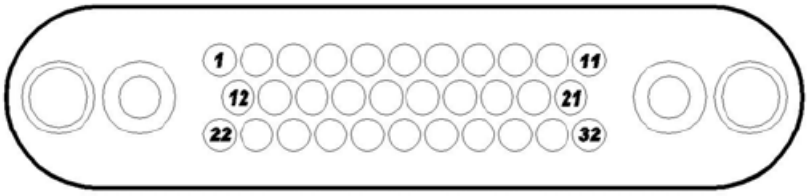


Figure 31: Expansion POGO Connector

Pin	Assignment
1	**GND1**
2	**VA-adapter**
3	**VA-adapter**
4	**+V5S**
5	**LAN-D1+**
6	**LAN-D1-**
7	**LAN-D2+**
8	**LAN-D2-**
9	**USB_DM1**
10	**USB-D3+**
11	**GND2**
12	**COM1-DCD**
13	**COM1-RXD**
14	**COM-DSR**
15	**CRT-GREEN**
16	**LAN-D4+**
17	**LAN-D4-**
18	**CRT_DDC_DATA**

Pin	Assignment
19	**COM1-RTS**
20	**USB_DP1**
21	**LAN-D3-**
22	**GND3**
23	**COM1-TXD**
24	**CRT_RED**
25	**CRT_BLUE**
26	**CRT_DDC_CLK**
27	**CRT_HSYNC**
28	**CRT_VSYNC**
29	**COM1-RI**
30	**COM1-CTS**
31	**COM1-DTR**
32	**GND4**

Table 7: Pin assignment expansion POGO connector

3.2.3 HRS8P Interface

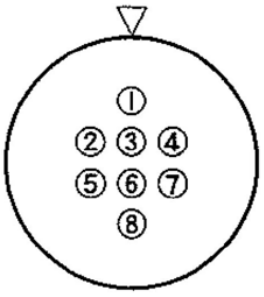


Figure 32: HRS8P

Pin	10/100 Mbit LAN	Gigabit LAN	USB	Audio	COM RS232	RGB
1	**TX+**	**TX+**	**D1+**	**H-R**	**DCD**	**R**
2	**TX-**	**TX-**	**D1-**	**H-L**	**RXD**	**G**
3	**RX+**	**RX+**	**NC**	**MIC**	**DSR**	**B**
4	**NC**	**D3+**	**GND**	**DET**	**RI**	**GND**
5	**RX-**	**RX-**	**NC**	**NC**	**CTS**	**H-SYNC**
6	**NC**	**D3-**	**GND**	**AGND**	**RTS**	**V-SYNC**
7	**NC**	**D4+**	**5V**	**NC**	**DTR**	**DATA**
8	**NC**	**D4-**	**5V**	**NC**	**TXD**	**CLK**

Table 8: Pin assignment HRS8P

3.2.4 DC jack

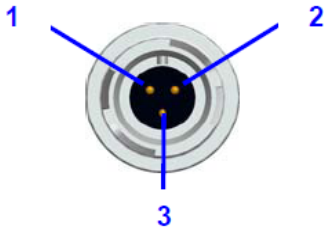


Figure 33: DC jack

Pin	Assignment
1	**DCIn +**
2	**NC**
3	**GND/DCIn-**

Table 9: Pin assignment DC jack

3.2.5 USB

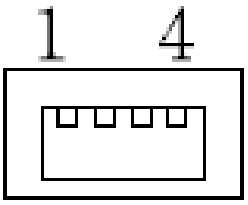


Figure 34: USB

Pin	Assignment
1	**Vcc +5V**
2	**USB-**
3	**USB+**
4	**GND**

Table 10: Pin assignment USB

3.3 Environmental Ratings

3.3.1 MIL-STD-810G

Item	Test Criteria
Low pressure (Altitude)	**According to MIL-STD-810G, Method 500.5 procedure I, II** • **Operating: 4.572m (15,000ft)** • **Non Operating: 12.192m (40,000ft**
High temperature	**According to MIL-STD-810G, Method 501.5 procedure I, II** • **Operating: +50°C (+122°F)** • **Non Operating: +70°C (+158°F)**
Low temperature	**According to MIL-STD-810G, Method 502.5 procedure I, II** • **Operating: -20°C (-4°F)** • **Non Operating: -40°C (-40°F)**
Temperature shock	**According to MIL-STD-810F, Method 503.5 procedure I-A** • **Operating: -20°C ~ +60°C (-4°F ~ +140°F)**
Rain	**According to MIL-STD-810G, Method 506.5 procedure II** • **Operating: 276kPa (40 psig), 5 surfaces, 40 minutes/surface**
Humidity	**According to MIL-STD-810G, Method 507.5** • **Operating: (Aggravated) 24 hours/cycle, total of 10 cycles Between 30°C (86°F) and 60°C (140°F) with the relative humidity at 95% constant)**
Salt Fog	**According to MIL-STD-810G, Method 509.5** • **Non Operating: Salt concentration of 5+-1%, 24 hours wet + 24hours dry/cycle. Total of 2 cycles/96 hours**
Vibration	**1. According to MIL-STD-810G, Method 514.6 procedure 1 category 20 (Ground Vehicles-ground mobile)** • **Table 514.6C-VII, Figure 514.6C-3, 60min/axis** **2. According to MIL-STD-810G, Method 514.6 procedure I category 14 (Rotary wing aircraft-Helicopter)** • **Table 514.6C-III, Figure 514.6D-3, 60min/axis** **3. According to MIL-STD-810G, Method 514.6 procedure IV category 24 (all material-minimum integrity test)** • **Figure 514.6E-1, 60min/axis**

Item	Test Criteria
Shock	**According to MIL-STD-810G, Method 516.6 procedure I, IV** • **Operating: Figure 516.6-10, Table 516.5C-II, 40g, 11ms, terminal-peak saw tooth shock pulse** • **Non Operating: 122cm onto each face, edge and corner for a total of 26 drops**
Solar radiation	**According to MIL-STD-810G, Method 505.5 procedure I** • **Operating : Figure 505.4-1 A1**
Explosive Atmosphere	**According to MIL-STD-810F, Method 511.5 procedure I** • **Operating test**

Table 11: MIL-STD-810

3.3.2 IEC IP

Standards	Parameters
IEC 60529 IP6x **Dust-tight**	**Powder type: Talcum** **Dust quantity: 2kg** **Chamber size: 1m³** **Test duration: 8h**
IEC 60529 IPx5 **Water spray (water jet)**	**Tube radius: 400mm** **Water flow: 1.8l/min** **Number of open holes: 25** **Test duration: 10min**

Table 12: IEC IP

Note: With all caps mounted.

3.3.3 MIL-STD-461F (optional)

Standards	Parameters
MIL-STD-461F (M-models only)	**CE101: Conducted Emissions, Power Leads 30Hz~10kHz** **CE102: Conducted Emissions, Power Leads, 10KHz~10MHz** **CS101: Conducted Susceptibility, Power Leads, 30Hz~150KHz Curve #2** **CS114: Conducted Susceptibility, Bulk Cable Injection, 10KHz~200MHz** **CS115: Conducted Susceptibility, Bulk Cable Injection, Impulse Excitation** **CS116: Conducted Susceptibility, Damper Sinusoidal Transients, Cable and Power Leads, 10KHz~ 100MHz** **RE101: Radiated Emissions, Magnetic Field, 30Hz~100KHz** **RE102: Radiated Emissions, Electric Field, 10KHz~18GHz** **RS101: Radiated Susceptibility, Magnetic Field, 30Hz~100KHz** **RS103: Radiated Susceptibility, Electric Field, 2MHz~40GHz**

Table 13: MIL-STD-461F

CHAPTER 4

BIOS Setup

4 BIOS Setup

Note: The contents may vary depending on computer configurations.

Note: You need to connect a USB keyboard with the DB6 to change BIOS settings.

Only experienced users should change BIOS settings. Wrong BIOS settings may cause malfunctions.

After an USB keyboard is connected with the DB6 press “Del” during POST to enter BIOS.

4.1 Main Menu

The Main Menu displays a system overview and the operating instructions.

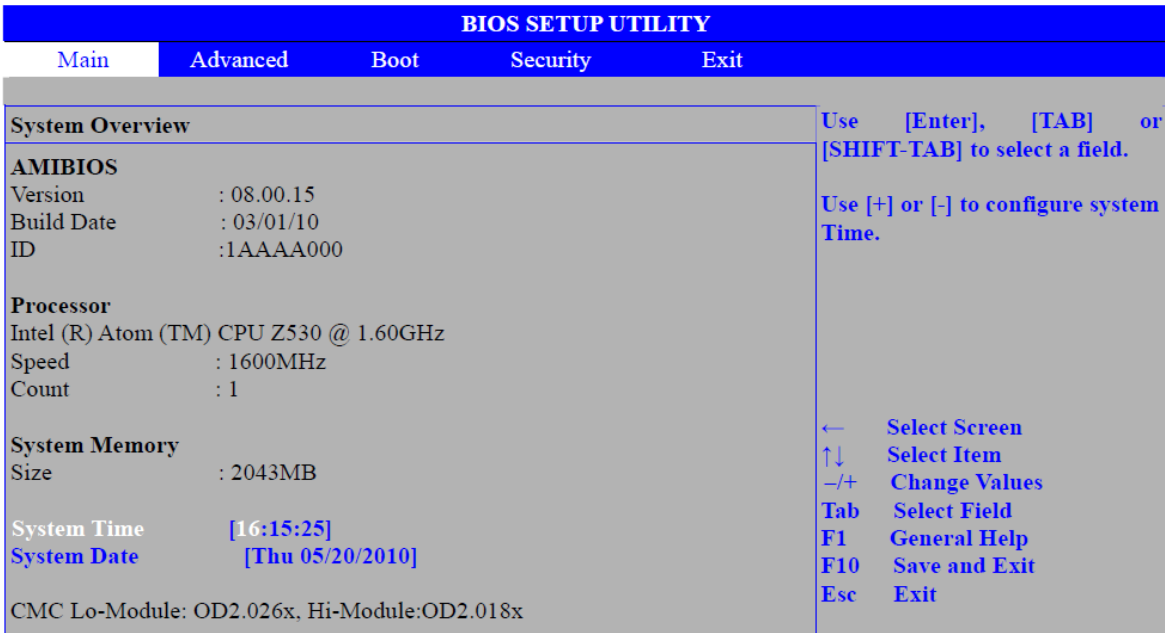


Figure 35: BIOS Main Menu

4.2 Advanced Menu

Advanced settings can be done in the Advanced Menu.

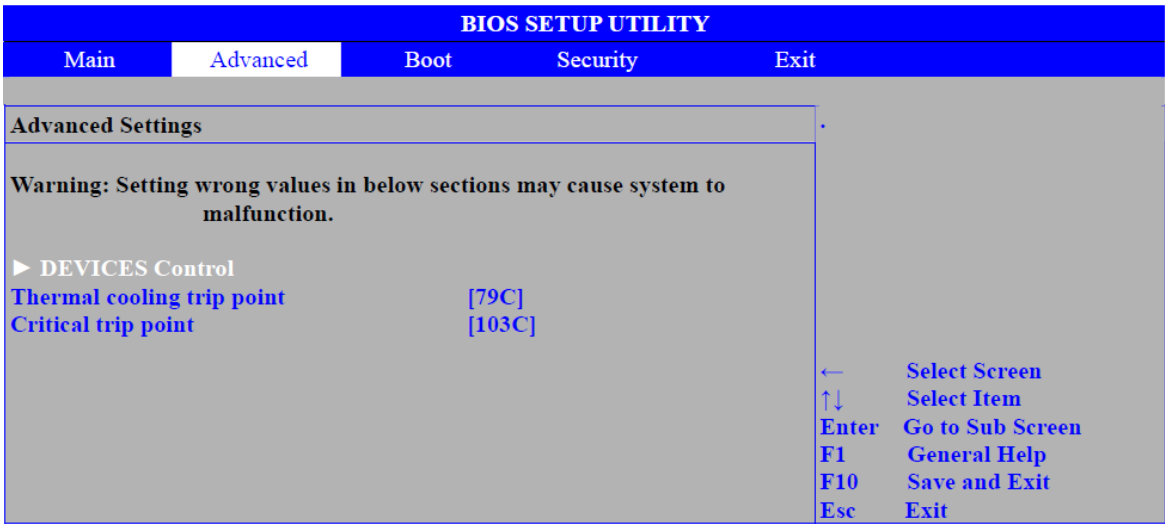


Figure 36: BIOS Advanced Menu

4.3 Boot Menu

Boot sequence can be adjusted in the Boot Menu.

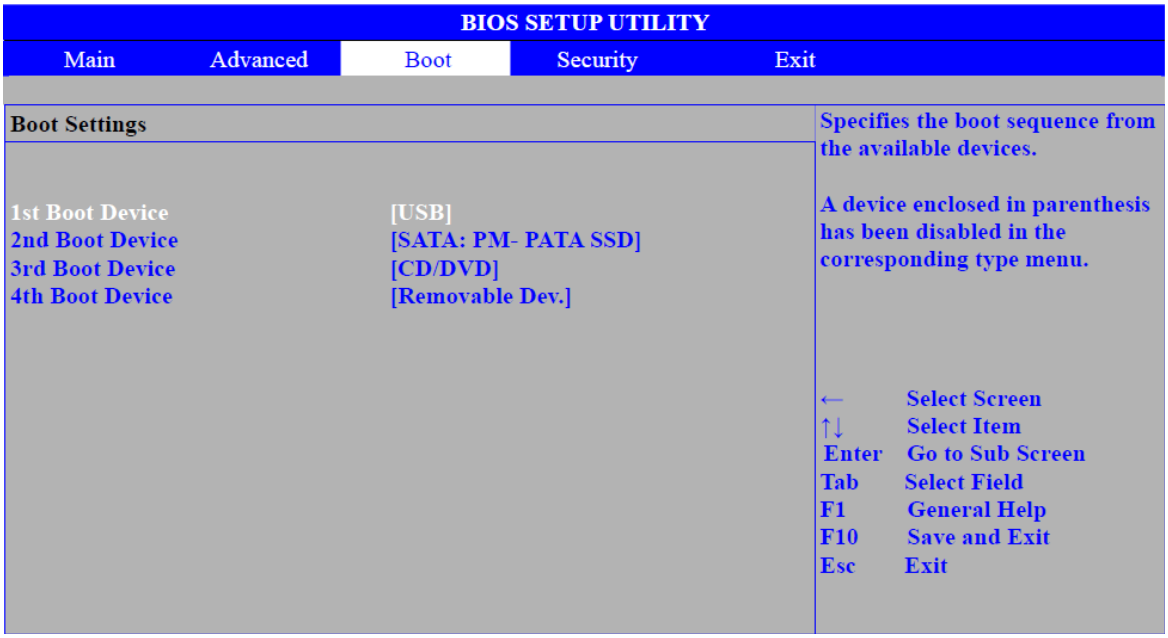


Figure 37: BIOS Boot Menu

4.4 Security Menu

Set the security settings in the Security Menu.

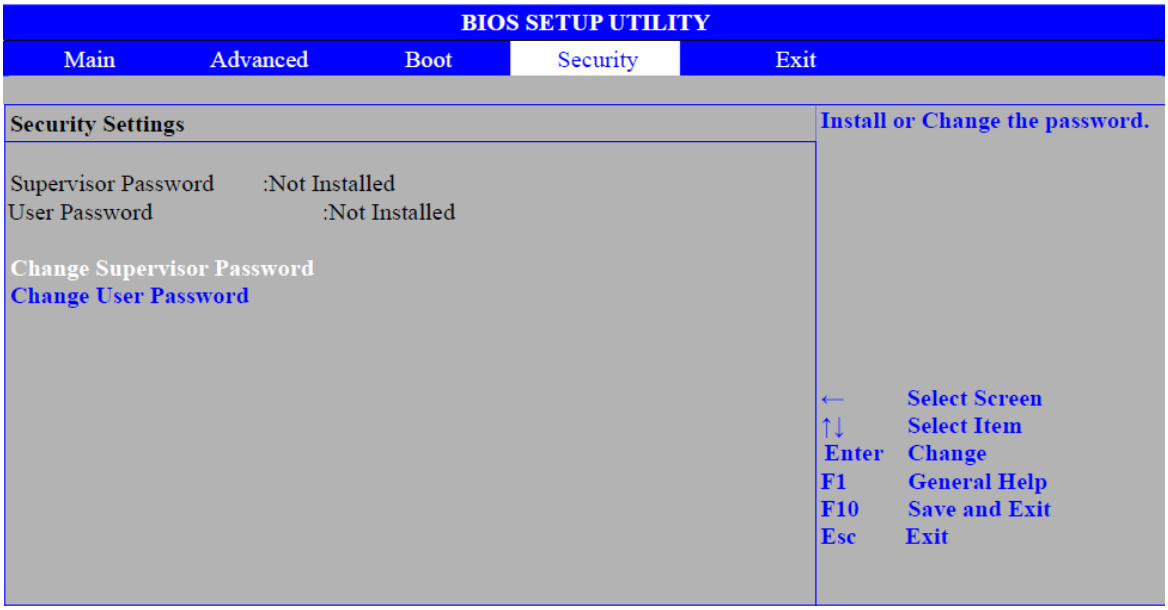


Figure 38: BIOS Security Menu

4.5 Exit Menu

Save and exit option settings in the Exit Menu.

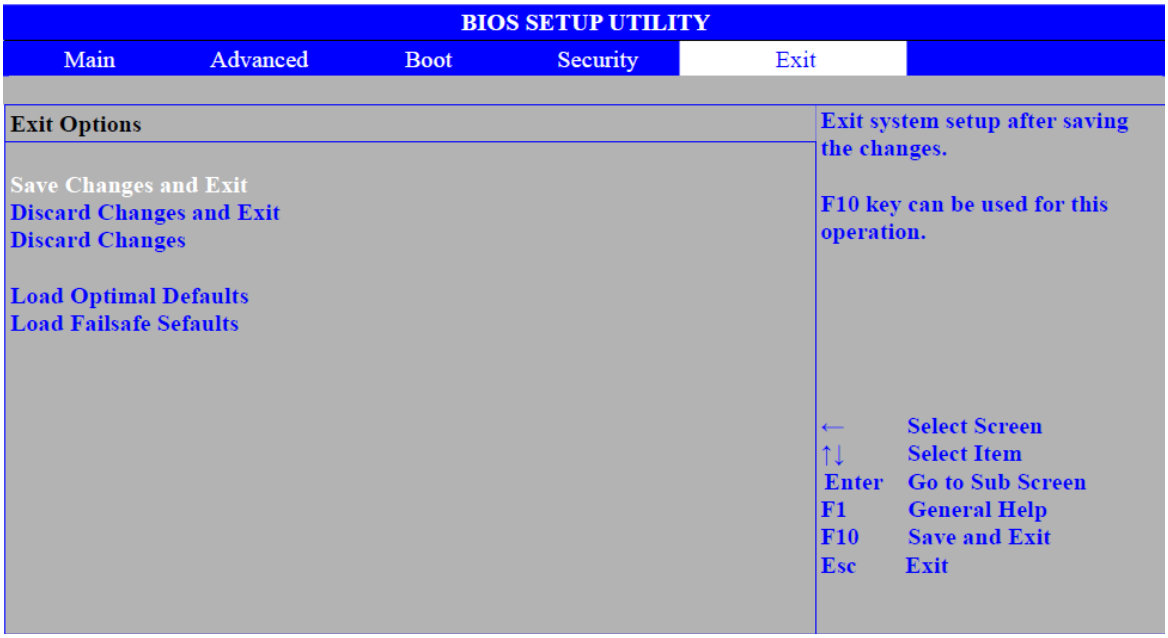


Figure 39: BIOS Exit Menu

CHAPTER 5

Drivers and Utilities

5 Drivers and Utilities

5.1 Driver

Note: Most device drivers are available in Windows XP/7. Only when the default driver does not work properly you need to install the factory bundled drivers. The utility CD/DVD includes most drivers of the computer's installed devices. Consult dealer if any driver is missing. Re-install drivers or perform "Driver Update" to replace the Windows default drivers.
Please check readme.txt file on utility CD/DVD to get the latest information before starting to install drivers.

The Utility DVD includes all the drivers for the installed devices of your DB6.
You can use the Device Manager of Windows to check if any drivers are needed to be installed.

You will need an external CD/DVD USB drive to read the Utility/Driver CD/DVD. You can copy the utility CD/DVD to the hard drive or a SD card if you need the drivers later when no external drive is available.

Note: Please install the chipset driver always first.
If there is any "reboot" showed during installation, please follow the instruction and reboot your device first and then continue your installation.

5.1.1 Chipset (XP only)

Windows Driver Installation:

Insert the Driver CD into the CD-ROM. Click infinst_autol.exe in the directory of **DB6\Drivers\Windows XP\Chipset** then follow the prompt to complete installation.

5.1.2 Graphic Controller

Windows Driver Installation:

Insert the Driver CD/DVD into the CD/DVD-drive. Click setup.exe in the directory of **DB6\Drivers\Windows 7\VGA** then follow prompt to complete driver installation.

5.1.3 Resolution

The table lists typical display modes only. The system also supports standard video modes with lower resolution and colour.

Resolution & Colour	LCD
600 x 480 x 32bit	O
800 x 480 x 32bit (native)	O
800 x 600 x 32bit	O
1024 x 768 x 32bit	O

Table 14: Resolution and Colour

5.1.4 Touch Screen

Windows Driver Installation:

Insert the Driver CD/DVD into the CD/DVD-drive. Click setup.exe in the directory of **DB6\Drivers\Windows 7\Touch Screen\V2-2-0-283(Win7_32_64bit_WHQL)** then follow the prompt to complete installation.

5.1.5 Stickpointer

Stickpointer helps to navigate the cursor on the screen.

Windows Driver Installation:

Insert the Driver CD/DVD into the CD/DVD-drive. Click setup.exe in the directory of **DB6\Drivers\Windows 7\stick-pint-ALPS\v7.2.2821.110-XP7-Logo (PW)** then follow the prompt to complete installation.

5.1.6 Audio

Windows Driver Installation:

Insert the Driver CD/DVD into the CD/DVD-drive. Click WDM_R253.exe in the directory of **DB6\Drivers\Windows 7\Audio\R2.53** then follow the prompt to complete installation.

5.1.7 Fingerprint Sensor (optional)

Windows Driver Installation:

Insert the Driver CD/DVD into the CD/DVD-drive. Click setup.exe in the directory of **DB6\Drivers\Windows 7\FingerPrint Validity\1.Application\DPPersonal\x86** then follow the prompt to complete installation.

5.1.8 Bluetooth

Windows Driver Installation:

Insert the Driver CD/DVD into the CD/DVD-drive. Click setup.exe in the directory of **DB6\Drivers\Windows 7\ Bluetooth_V5.x\install** then follow the prompt to complete installation.

5.1.9 WLAN (optional)

Windows Driver Installation:

Insert the Driver CD/DVD into the CD/DVD-drive. Click ICS_Dx32.exe in the directory of **DB6\Drivers\Windows 7\WLAN\WIFI5100** then follow the prompt to complete installation.

5.1.10 WWAN (optional)

Windows Driver Installation:

Insert the Driver CD/DVD into the CD/DVD-drive. Click Autorun.exe in the directory of **DB6\Drivers\Windows 7\HSDPA_HC25\hc25_rev02050_conman_install** then follow the prompt to complete installation.

5.1.11 GPS (optional)

Windows Driver Installation:

Activate Device Power Manager and turn GPS ON. The “Found New Hardware Wizard” window will show up. Select “No, not this time” → “Install from a list… (Advanced)” → “Include this location in the search: **DB6\Drivers\Windows 7\GPS ublox5\Windows Win 7** then follow the prompt to complete installation.

To install the GPS application run u-center_6.01_Installer.exe in the directory of **DB6\Drivers\Windows XP (32-bit)\GPS_ublox5\Windows WinXP\AP** then follow the prompt to complete installation.

5.1.12 Gigabit LAN (optional)

Windows Driver Installation:

Insert the Driver CD/DVD into the CD/DVD-drive. Click setup.exe in the directory of **DB6\Drivers\Windows XP (32-bit)\PCIe_1G LAN\PCIE_Install_5770_10202010** then follow the prompt to complete installation.

Note: File and directory names may change due to newer software version.

5.2 Utilities

5.2.1 Device Power Manager

Device Power Manager is an exclusive application designed and developed for the Wireless Devices of DB6. Through Device Power Manager, turning the power ON or OFF become more convenient for being one of the power saving tips.

Windows Driver Installation:

Insert the Driver CD/DVD into the CD/DVD-drive. Click setup.exe in the directory of **Utilities\Device Power Manager\DB6 Utility 20101122(1.0.0.6)** then follow the prompt to complete installation.

Note: The driver of AutoHotKey has been packed in Device Power Manager. To activate the keypad hotkeys, be sure to install this application.

CHAPTER 6

Maintenance and Service

6 Maintenance and Service

6.1 Cleaning

ALWAYS turn OFF the power, unplug the power cord and remove the battery before cleaning. The exterior of the system and display may be wiped with a clean, soft, and lint-free cloth. If there is difficulty removing dirt, apply non-ammonia, non-alcohol based glass cleaner to the cloth and wipe. An air gun is recommended for cleaning water and dust. For salty water please clean with fresh water then blow-dry with an air gun. Be sure not to turn the computer up side down while there is water being applied.

6.2 Troubleshooting

Should the computer fail to function properly, the troubleshooting steps below may be followed.

- Check AC/vehicle adapter, battery, and the power source.
- Minimize the configuration, i.e., remove extra peripherals and devices.
- Remove the modules one by one (HDD, CD-ROM, FDD, Battery, etc.).
- Remove the software suspected.
- Set BIOS fail-safe default.
- Re-install operating system and application software.

6.3 Service

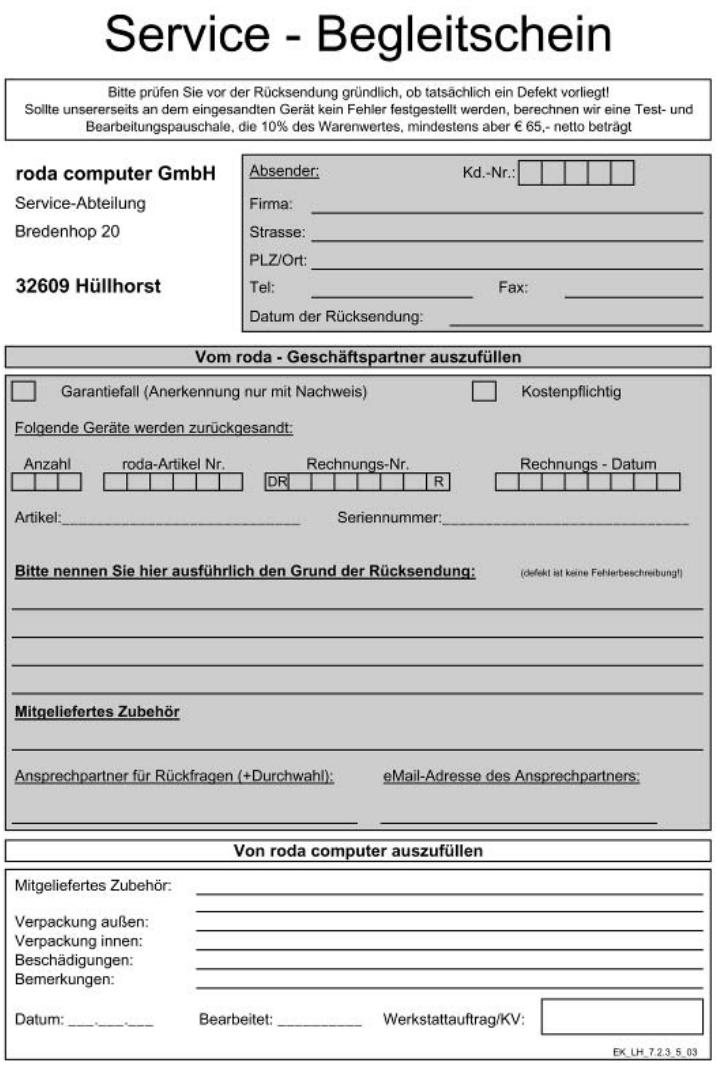
If troubleshooting steps are unsuccessful, consult your dealer for service. If they can not help you please call roda Service Center.

Service address: **roda Service Center** **Bredenhop 20** **32609 Hüllhorst** **Phone.: +49 5744-944 470** **Fax: +49 5744-944 475** **E-Mai: support@roda-computer.com**	**Service:** **Mon – Thu 8:30 am - 12:30 pm** **& 1:15 pm - 4:30 pm** **Fri 8:30 am - 12:30 pm** **& 1:15 pm - 3:00 pm**

Note: The roda Service Center needs a detailed description of the problem and the serial number of the device.

If it is necessary to send in your computer for repairs, you can download a service waybill (Service Supply Note) on the roda homepage (www.roda-computer.com), which you have to fill out.

6.3.1 Service Supply Note



Service - Begleitschein

Bitte prüfen Sie vor der Rücksendung gründlich, ob tatsächlich ein Defekt vorliegt!
Sollte unsererseits an dem eingesandten Gerät kein Fehler festgestellt werden, berechnen wir eine Test- und Bearbeitungspauschale, die 10% des Warenwertes, mindestens aber € 65,- netto beträgt

roda computer GmbH
Service-Abteilung
Bredenhop 20

32609 Hüllhorst

Absender: Kd.-Nr.:
Firma:
Strasse:
PLZ/Ort:
Tel: Fax:
Datum der Rücksendung:

Vom roda - Geschäftspartner auszufüllen

☐ Garantiefall (Anerkennung nur mit Nachweis) ☐ Kostenpflichtig

Folgende Geräte werden zurückgesandt:

Anzahl | roda-Artikel Nr. | Rechnungs-Nr. DR ... R | Rechnungs - Datum

Artikel: Seriennummer:

Bitte nennen Sie hier ausführlich den Grund der Rücksendung: (defekt ist keine Fehlerbeschreibung!)

Mitgeliefertes Zubehör

Ansprechpartner für Rückfragen (+Durchwahl): eMail-Adresse des Ansprechpartners:

Von roda computer auszufüllen

Mitgeliefertes Zubehör:
Verpackung außen:
Verpackung innen:
Beschädigungen:
Bemerkungen:

Datum: ___.___.___ Bearbeitet: _____ Werkstattauftrag/KV:

EK_LH_7.2.3_5_03

Figure 40: Service Supply Note (German Version)

Include this sheet with the following information:

- Name
- Address
- Serial number, Customer number, Article number
- Place and date of purchase or the original invoice number

- Date of failure
- A DETAILED description of the problems you have encountered
- A list of the hardware/ software configuration, if applicable

6.3.2 Downloads

Check our website (www.roda-computer.com) for downloads:

- Updates
- Drivers
- Manuals
- Service Supply Note

Annex

ANNEX

Annex

Annex A: List of abbreviations

A	Ampere (unit)
AC	Alternating Current
ACPI	Advanced Configuration and Power Management Interface
APM	Advanced Power Management
ATA	Advanced Technology Attachment
BIOS	Basic Input Output System
C	Celsius (unit)
CDMA	Code Division Multiple Access
CD-ROM	Compact Disk Read only Memory
CE	Conformité Européene
CMOS	Complementary Metal Oxide Semiconductor
CPU	Central Processing Unit
DC	Direct Current
DMA	Direct Memory Access
DOS	Disc Operation System
DVD	Digital Versatile Disc
EMV	Elektro-Magetische Verträglichkeit
EN	Europäische Norm
F	Fahrenheit (unit)
FCC	Federal Communication Commision
GB	Giga-Byte (unit)
Gbit/s	Giga-Bit per second (unit)
GHz	Giga-Hertz (unit)
GND	Ground
GPS	Global Positioning System
GPRS	General Packet Radio Service
Hz	Hertz
HDD	Hard Disk Drive
IDE	Integrated Drive Electronics
IEC	International Electrotechnical Commission
IEEE	Institute of Electrical and Electronics Engineers
I/O	Input/Output
IP	Ingress Protection
kHz	Kilo-Hertz (unit)
kPA	Kilo-Pascal (unit)

LAN	Local Area Network
LCD	Liquid Crystal Display
LED	Light Emitting Diode
mAh	Milliampere Hour (unit)
MB	Mega-Byte (unit)
Mbit/s	Mega-Bit per second (unit)
MHz	Mega-Hertz (unit)
PC	Personal Computer
PCI	Peripheral Component Interconnect
PCMCIA	Personal Computer Memory Card Industry Association
POST	Power On Self Test
PSIG	Pounds-Force per Square Inch
RAM	Random Access Memory
RJ(45)	Registration Jack(45)
RS(232)	Recommended Standard(232 etc.)
RTC	Real Time Clock
SSD	Solid State Disc
TÜV	Technischer Überwachungs Verein
UL	Underwriters Laboratories
UMPC	Ultra Mobile PC
USB	Universal Serial Bus
V	Volt (unit)
W	Watt (unit)
WLAN	Wireless LAN
WWAN	Wireless Wide Area Network

Annex B: Table of power supply connectors for different countries

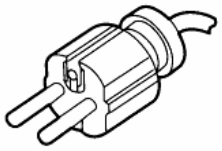
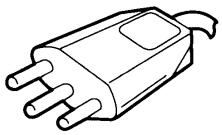
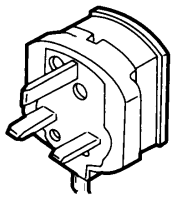
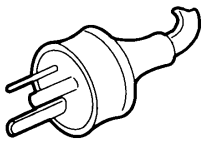
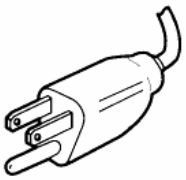
Version	Country/region	Technical data
	**Europe**	**220V, 50Hz, 6A**
	**Switzerland**	**220V, 50Hz, 6A**
	**Great Britain**	**240V, 50Hz, 6A**
	**Australia**	**240V, 50Hz, 6A**
	**North America**	**120V, 60Hz, 7A**

Table 15: Table of power supply connectors

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Annex E: Material Safety Data Sheet Battery

Includes certificate according to UN Manual of Test Criteria, Part III, Subsection 38.3 (Test T1-T8).

Manufacturer and Product:

Manufacturer	J.S POWER CO., LTD.
Product	Bat Pack BD62A
Capacity	3900mAh
Voltage	7.4V
Type	Lithium ion

Dangerous Goods Classification Status:

According to the 51st Edition of the Dangerous Goods Regulation effective January 2010, transporting a lithium ion battery is not subject to Dangerous Goods Regulations if the total Watt-Hour rating is no more than 100Wh.

Model	Total Watt-Hour rating	Remarks
BD62A	28.86 Wh	Not dangerous goods

Hazardous and Toxicity class:

Class Name	Not applicable for regulated class
Hazard	It may cause heat generation or electrolyte leakage if battery terminals contact with other metal. Electrolyte is flammable. In case of electrolyte leakage, move the battery from fire immediately.
Toxicity	Vapor generated from burning batteries may make eyes, skin and throat irritiate.

Handling and Storage:

When packing the batteries, do not allow battery terminals to contact each other, or contact with other metals. Be sure to pack batteries by providing partitions in the packaging box, or in a separate plastic bag so that single batteries are not mixed together.
Do not let water penetrate into packaging boxes during their storage and transportation.
The batteries will be stored at room temperature, charged to about 30~50% of capacity.
Do not store the batteries in places of the high temperature exceeding 35 degree C or under direct sunlight or in front of a stove. Please also avoid the places of high humidity. Be sure not to expose the battery to condensation, water drop or not the store it under frozen condition.
Please avoid storing the battery in the places where it is exposed to the static electricity. It may cause the protection circuit to be damaged.

Stability and Reactivity:

Since batteries utilize a chemical reaction they are actually considered a chemical product. As such, battery performance will deteriorate over time even if stored for a long period of time without being used. In addition, the various usage conditions such as charge, discharge, ambient temperature, etc. are not maintained within the specified ranges the life expectancy of the battery may be shortened or the device in which the battery is used may be damaged by electrolyte leakage.

Toxicological Information:

Acute toxicity	Oral (rat) LD50>2g/kg (estimated)
Irritation	Irritating to eyes and skin
Chronic Toxicity	Not specified

Ecological Information:

When properly used or disposed, this product do not present environmental hazard.

Disposal Considerations (Precaution for Recycling):

When the battery is worn out, dispose it under the ordinance of each local government or the law issued by relating government. Disposal of the worn-out battery may be subjected to Collection and Recycling Regulations.

Transport Information:

All Lithium ion and lithium polymer cells and batteries must be tested in accordance with the „UN Manual of Tests and Criteria, Part III, Subsection 38.3 (Test T1-T8) 2010“.
See Dangerous goods rating. The battery can be transported on aircrafts.
Any person preparing or offering cells or batteries for transport must receive adequate instruction on these requirements commensurate with their responsibilities.

Regulatory Information:

International Conventions	*Air – IATA (International Air Transport Association) Dangerous Goods Regulations (DGR) 48th Edition Effective January 2007 *Air – ICAO (International Civil Aviation Organization) Technical Instructions for the safe transport of dangerous goods by air. *Sea – IMDG (International Maritime Dangerous Goods) regulations *Land – ADR (Strasse), RID (Schiene) United Nations „Recommendations on the Transport of Dangerous Goods Manual of Tests Criteria, Part III, Subsection 38.3, (Tests T1-T8) 2009. United Nations “Recommendations on the Transport of Dangerous Goods, Model Regulations” United Nations “Recommendations on the Transport of Dangerous Goods, Manual of Tests Criteria”
USA	„Code of Federal Regulations (49CFR Ch. 1 & 173-185) IATA und ICAO Provision A45 und IMO Special Provision 188

IATA T1-T8

Nr.	Test Items	Results
T1	**Altitude Simulation** – Stored batteries at a pressure of 11.6kPa or less for at least six hours at ambient temperature(20±5°C).	**Pass** – no mass loss, no leakage, no venting, no disassembly, no rupture and no fire
T2	**Thermal Test** – Stored batteries for at least six hours at a test temperature equal to 75±2°C, followed by storage for at least six hours at a test temperature equal to -40±2°C. The maximum time interval between test temperature extremes was 30 minutes. The procedure was repeated 10 times, after which all test batteries were stored for 24 hours at ambient temperature (20±5°C).	**Pass** – no mass loss, no leakage, no venting, no disassembly, no rupture and no fire

Nr.	Test Items	Results
T3	**Vibration** – Batteries were firmly secured to the platform of the vibration machine without distorting the cells in such am manner as to faithfully transmit the vibration. The vibration was a sinusoidal waveform with a logarithmic sweep between 7Hz and 200Hz and back to 7Hz traversed in 15 minutes. This cycle was repeated 12 times for a total of 3 hours for each three mutually perpendicular mounting positions of cell. One of the directions of vibration was perpendicular to the terminal face. The logarithmic frequency sweep is as follows: from 7Hz a peak acceleration of 1gη is maintained until 18Hz is reached. The amplitude is then maintained at 0.8mm and the frequency increased until a peak acceleration of 8gη occurs (approximately 50Hz). A peak acceleration of 8gη is then maintained until the frequency is increased to 200 Hz.	**Pass** – no mass loss, no leakage, no venting, no disassembly, no rupture, no fire
T4	**Shock** – Batteries were secure to the testing machine by means of a rigid mount which will support all mounting surfaces of each test battery. Each battery was subjected to a half-sine shock of peak acceleration of 150gη and pulse duration of 6 milliseconds. Each battery were subjected to three shocks in the positive direction followed by there shocks in the negative direction off each of three mutually perpendicular mounting positions of the cell for a total of 18 shocks.	**Pass** – no mass loss, no leakage, no venting, no disassembly, no rupture and no fire
T5	**External Short Circuit** – Batteries tested were temperature stabilized so that its external case temperature reaches 55±2°C and then the battery was subjected to a short circuit condition with a total external resistance of less then 0.1ohm at 55±2°C. This short circuit condition is continued for at least one hour after the battery external case temperature has returned to 55±2°C. The battery must be observed for a further six hours for the test to be concluded.	**Pass** – no mass loss, no leakage, no venting, no disassembly, no rupture and no fire

Nr.	Test Items	Results
T6	**Impact (for cells only)** – The test sample cell or component cell was placed on a flat surface. A 15.8mm diameter bar was placed across the centre of the sample. A 9.1kg mass was dropped from a height of 61±2.5cm onto the sample.	**Pass** – external temperature does not exceed 170°C and there is no disassembly and no fire within six hours of the test
T7	**Overcharge** – the charge current was set at twice the manufacturer's recommended maximum continuous charge current. The minimum voltage of the test was as follows: -when the manufacturers charge voltage is not more than 18V, the minimum voltage of the test shall be the lesser of two times the maximum charge voltage of the battery or 22V. -when the manufacturer's recommended charge voltage is more then 18V, the minimum voltage of the test shall be 1.2 times the maximum charge voltage.	**Pass** – no disassembly and no fire within seven days of the test
T8	**Forced Discharge (for cell only)** – Each cell was forced discharged at ambient temperature by connecting it in series with a 12V D.C. power supply at an initial current equal to the maximum discharge current specified by the manufacturer.	**Pass** – no disassembly and no fire within seven days of the test